

## Claims

- [c1] What is claimed is:
- 1.A method of diagnosing cardiac syndromes, the method comprising the acts of:
    - acquiring data from a first diagnostic test;
    - processing the data from the first diagnostic test to produce an indicator;
    - acquiring data from a second diagnostic test;
    - processing the data from the second diagnostic test to produce a second indicator;
    - combining the indicators; and
    - calculating a risk of a cardiac syndrome based on the combination of indicators.
- [c2] 2.A method as set forth in claim 1, further comprising the acts of acquiring data from a third diagnostic test and processing the data from the third diagnostic test to produce a third indicator.
- [c3] 3.A method as set forth in claim 1, wherein the act of combining the indicators includes a Mamdani inference method.
- [c4] 4.A method as set forth in claim 1, wherein the act of calculating a risk of a cardiac syndrome includes a Mamdani inference method.
- [c5] 5.A method as set forth in claim 1, wherein the act of acquiring data from a first diagnostic test includes acquiring diagnostic data of a first type.
- [c6] 6.A method as set forth in claim 5, wherein the act of acquiring data from a first diagnostic test is performed by an ECG acquisition module.
- [c7] 7.A method as set forth in claim 5, wherein the act of acquiring data from a first diagnostic test is performed by a biochemical testing module.
- [c8] 8.A method as set forth in claim 5, wherein the act of acquiring data from a first diagnostic test is performed by a history acquisition module.
- [c9] 9.A method as set forth in claim 5, wherein the act of acquiring data from a first diagnostic test is performed by a nuclear imaging module.

- PCT/EP2018/051080
- [c10] 10.A method as set forth in claim 5, wherein the act of acquiring data from a first diagnostic test is performed by an ultrasonic imaging module.
  - [c11] 11.A method as set forth in claim 5, wherein the act of acquiring data from a second diagnostic test includes acquiring diagnostic data of a second type that differs from the diagnostic data acquired by the first diagnostic test.
  - [c12] 12.A method as set forth in claim 11, wherein the act of acquiring data from a second diagnostic test includes acquiring data from an ECG acquisition module.
  - [c13] 13.A method as set forth in claim 11, wherein the act of acquiring data from a second diagnostic test includes acquiring data from a biochemical testing module.
  - [c14] 14.A method as set forth in claim 11, wherein the act of acquiring data from a second diagnostic test includes acquiring data from a history acquisition module.
  - [c15] 15.A method as set forth in claim 11, wherein the act of acquiring data from a second diagnostic test includes acquiring data from a nuclear imaging module.
  - [c16] 16.A method as set forth in claim 11, wherein the act of acquiring data from a second diagnostic test includes acquiring data from an ultrasonic imaging module.
  - [c17] 17.A method as set forth in claim 1, wherein the method is for diagnosing acute cardiac syndromes.
  - [c18] 18.A cardiac syndrome diagnostic system comprising:
    - a first cardiac activity acquisition device operable to generate a first cardiac activity data;
    - a second cardiac activity acquisition device operable to generate a second cardiac activity data;
    - one or more processors to generate a first and second indicator based on the first and second cardiac activity data, respectively; and
    - a fusion engine operable to receive the first and second indicators, generate a first and second set of degrees of membership based on the first and second

indicators, and generate a risk of a cardiac syndrome based on a combination of the first and second sets of degrees of membership and a set of predetermined rules.

- [c19] 19.A system as set forth in claim 18, wherein the fusion engine includes a fuzzifier.
- [c20] 20.A system as set forth in claim 18, wherein the fusion engine includes an inference engine.
- [c21] 21.A system as set forth in claim 18, wherein the fusion engine includes a defuzzifier.
- [c22] 22.A system as set forth in claim 18, wherein the system diagnoses acute cardiac syndromes.
- [c23] 23.A diagnostic system comprising:
  - a first physiological activity acquisition module;
  - a second physiological activity acquisition module; and
  - a fusion engine operable to receive data from the first and second modules and to generate a risk of ACS based on a combination of the data received from the first and second modules.
- [c24] 24.A system as set forth in claim 23, wherein the combination of the data received from the first and second modules is based on fuzzy logic algorithms.
- [c25] 25.A system as set forth in claim 23, wherein the first physiological activity acquisition module performs a first physiological test on physiological data of a first type.
- [c26] 26.A system as set forth in claim 25, wherein the first physiological activity acquisition module is an ECG acquisition module.
- [c27] 27.A system as set forth in claim 25, wherein the first physiological activity acquisition module is a biochemical testing module.
- [c28] 28. A system as set forth in claim 25, wherein the first physiological activity acquisition module is a history acquisition module.

- [c29] 29.A system as set forth in claim 25, wherein the first physiological activity acquisition module is a nuclear imaging module.

[c30] 30.A system as set forth in claim 25, wherein the first physiological activity acquisition module is an ultrasonic imaging module.

[c31] 31.A system as set forth in claim 25, wherein the second physiological activity acquisition module performs a second physiological test on physiological data of a second type that is different than the first type of physiological data.

[c32] 32. A system as set forth in claim 31, wherein the second physiological activity acquisition module is an ECG acquisition module.

[c33] 33.A system as set forth in claim 31, wherein the second physiological activity acquisition module is a biochemical testing module.

[c34] 34.A system as set forth in claim 31, wherein the second physiological activity acquisition module is a history acquisition module.

[c35] 35.A system as set forth in claim 31, wherein the second physiological activity acquisition module is a nuclear imaging module.

[c36] 36.A system as set forth in claim 31, wherein the second physiological activity acquisition module is an ultrasonic imaging module.

[c37] 37.A method for diagnosing acute cardiac syndromes (ACS), the method comprising the acts of:  
acquiring ECG data;  
processing the ECG data to produce an ECG indicator;  
acquiring biomarker data;  
processing the biomarker data to produce a biomarker indicator;  
combining the indicators; and  
calculating a risk of ACS using fuzzy logic rules.

[c38] 38.A method of diagnosing cardiac syndromes, the method comprising the acts of:  
acquiring data from a plurality of diagnostic tests;

processing the data from the plurality of diagnostic tests to produce a plurality of indicators;

combining the plurality of indicators; and

calculating a risk of a cardiac syndrome based on the combination of the plurality of indicators.

- [c39] 39. A method as set forth in claim 38, wherein the cardiac syndrome is an acute cardiac syndrome.